Supporting Information

**Figure S1** TEM image showing the deposition of Cu-nanocrystals from inside of an originally Cu-filled carbon nanotube after tube biasing inside a transmission electron microscope (From Ref. 39).

**Figure S2** TEM images of (a) a multi-walled BN nanotube bent inside; and (b) the same tube after the release of pressure. The insets show the low-magnification images of the tube as guide to the eye. The circles mark the area of interest. Note that in spite of the severe corrugations of the tube walls in the bent state, the tube completely restores its straight shape after the load release (From Ref. 45).